

**Figure 3. View of mild mitral regurgitation after a dual-chamber pacemaker placement (arrow)**

severe mitral regurgitation and a suspicion of cardiac mass, transthoracic echocardiography (TTE) was performed. TTE demonstrated severe mitral regurgitation and a huge caseous calcification of the mitral annulus mimicking a mass in the posterior mitral annulus (Fig. 2, Video 3. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)). We decided to place a dual-chamber pacemaker due to atrioventricular block. After dual-chamber pacemaker implantation mitral regurgitation decreased and on transthoracic echocardiographic examination mild mitral regurgitation was seen (Fig. 3, Video 4. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)). The symptoms resolved and the patient was discharged. We conclude that caseous calcification of the mitral annulus should be considered a cause not only in the background MR but also in the differential diagnosis of cardiac masses and conduction system disease.

**Video 1, 2.** Apical four -and five- chamber TTE shows huge calcific mass in the mitral valve

TTE - transthoracic echocardiography

**Video 3.** TEE demonstrates caseous calcification of the mitral annulus mimicking mass and severe mitral regurgitation

TTE - transthoracic echocardiography

**Video 4.** View of mild mitral regurgitation after a dual-chamber pacemaker placement

**İsa Öner Yüksel, Şakir Arslan, Göksel Çağırıcı, Erkan Köklü**  
Clinic of Cardiology, Antalya Education and Research Hospital,  
Antalya-Turkey

**Address for Correspondence/Yazışma Adresi:** Dr. İsa Öner Yüksel  
Antalya Eğitim ve Araştırma Hastanesi, Kardiyoloji Kliniği,  
07090 Kepez, Antalya-Türkiye  
Phone: +90 242 249 44 00/2000 Fax: +90 242 249 44 62  
E-mail: drisayuksel2@hotmail.com

**Available Online Date/Çevrimiçi Yayın Tarihi:** 05.11.2012

©Telif Hakkı 2013 AVES Yayıncılık Ltd. Şti. - Makale metnine [www.anakarder.com](http://www.anakarder.com) web sayfasından ulaşılabilir.

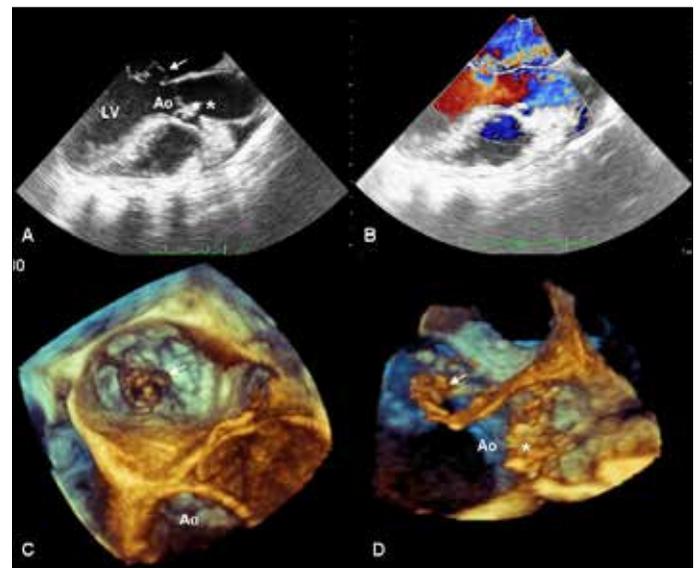
©Copyright 2013 by AVES Yayıncılık Ltd. - Available on-line at [www.anakarder.com](http://www.anakarder.com)  
doi:10.5152/akd.2013.019

## Three-dimensional echocardiographic evaluation of an anterior mitral leaflet perforation and aortic vegetation due to infective endocarditis



*Enfektif endokardite bağlı gelişen aort kapak vejetasyonunun ve anterior mitral kapak perforasyonunun üç boyutlu transözefajiyal ekokardiyografi ile değerlendirilmesi*

Complicated left-sided native valve infective endocarditis remains a serious disease with significant morbidity and mortality. Mitral perforations are rare complications of destructive endocarditis. A 50-year-old woman has applied for fever and shortness of breath for 3 months. Electrocardiography showed a sinus tachycardia. Two-dimensional transthoracic echocardiography demonstrated severe mitral and aortic regurgitation. Two-dimensional transesophageal echocardiography (2D-TEE) revealed mitral valve perforation and aortic valve vegetation (Fig.1A and Video 1A. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)), also severe aortic and mitral regurgitation because of destructive endocarditis (Fig. 1B and Video 1B. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)). To better define this pathology, we performed three dimensional transesophageal echocardiography (3D-TEE). 3D zoom modality TEE displayed mitral valve perforation at A2 scallop (Fig.1C and Video 1C. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)) and vegetation at the aortic valve (Fig. 1D). Infective endocarditis is a life-threatening disease still associated with a high mortality rate despite recent advances in diagnostic imaging, antimicrobial, and surgical therapies. Aortic valve is primarily affected in the left-sided endocarditis, and then mitral anterior



**Figure 1. A) Two-dimensional transesophageal echocardiography showing mitral valve perforation and aortic valve vegetation, B) Two-dimensional transesophageal echocardiography displaying severe aortic and mitral regurgitation because of destructive endocarditis, C) 3D zoom modality TEE displaying mitral valve perforation at A2 scallop, D) 3D zoom modality TEE showing vegetation at the aortic valve**

Ao - aorta, arrow-perforation of anterior mitral valve, asterisk-aortic vegetation, LV - left ventricle, TEE - transesophageal echocardiography

leaflet is involved due to aortic regurgitation. Mitral anterior leaflet endocarditis may cause aneurysmal formation and then it can lead to mitral perforation. The sensitivity of TTE ranges from 40 to 63% while that of TEE ranges from 90 to 100% for endocarditis. Furthermore, newer imaging modalities such as 3D TEE can provide a more detailed evaluation especially for complications of destructive endocarditis.

**Video 1.** A) Two-dimensional transesophageal echocardiography showing mitral valve perforation and aortic valve vegetation, B) Two-dimensional transesophageal echocardiography displaying severe aortic and mitral regurgitation because of destructive endocarditis, C) 3D zoom modality TEE displaying mitral valve perforation at A2 scallop

Ao - aorta, arrow-perforation of anterior mitral valve, asterisk-aortic vegetation, LV - left ventricle, TEE - transesophageal echocardiography

**Sait Demirkol, Murat Ünlü<sup>1</sup>, Şevket Balta, Uygur Çağdaş Yüksel**  
Department of Cardiology, Faculty of Medicine, GATA,  
Ankara-Turkey  
<sup>1</sup>Department of Cardiology, Beytepe Military Hospital,  
Ankara-Turkey

**Address for Correspondence/Yazışma Adresi:** Dr. Sait Demirkol  
GATA, Kardiyoloji Bölümü, Tevfik Sağlam Cad. 06018 Etlik, Ankara-Türkiye  
Phone: +90 312 304 42 81 Fax: +90 312 304 42 50  
E-mail: saitemirkol@yahoo.com

**Available Online Date/Çevrimiçi Yayın Tarihi:** 05.11.2012

©Telif Hakkı 2013 AVES Yayıncılık Ltd. Şti. - Makale metnine [www.anakarder.com](http://www.anakarder.com) web sayfasından ulaşılabilir.

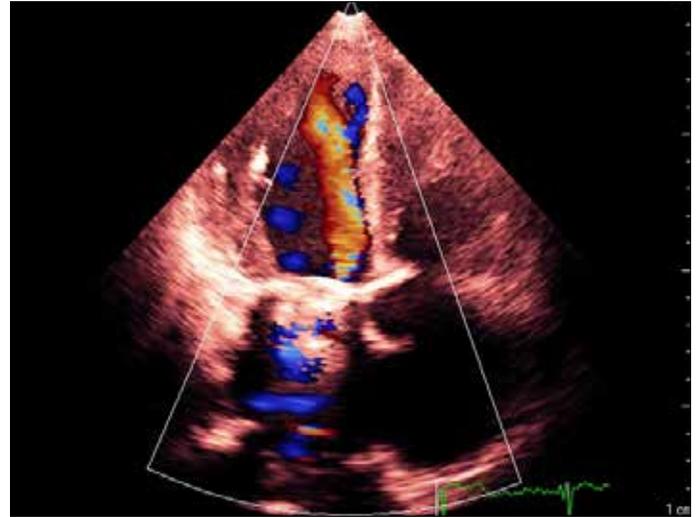
©Copyright 2013 by AVES Yayıncılık Ltd. - Available on-line at [www.anakarder.com](http://www.anakarder.com)  
doi:10.5152/akd.2013.020

## Prosthetic mitral valve obstruction: diagnosis with real-time three-dimensional transesophageal echocardiography



*Mitral protez kapak disfonksiyonu: Gerçek zamanlı 3 boyutlu transözefageal ekokardiyografik görüntüleme*

Prosthetic valve obstruction is a fatal complication of mechanical valve replacement surgery which develops due to thrombosis or pannus formation. A 62-year-old-man who underwent prosthetic mitral valve (PMV) replacement four months ago, was admitted to our hospital with acute heart failure. The INR was 10 on presentation. However, two months before his admission, the INR value was 1.5. On transthoracic echocardiography (TTE) mean diastolic transmitral gradient was 13 mmHg and effective regurgitant orifice area 1 cm<sup>2</sup>. Based on TTE image, we suspected restricted motion of the posterior leaflet of prosthetic mitral valve (Fig. 1). Two-dimensional (2-D) transesophageal echocar-



**Figure 1.** Transthoracic echocardiographic image of the stuck prosthetic mitral valve

diography (TEE) revealed dysfunction of posterior leaflet (Video 1. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)). Cine fluoroscopy confirmed malfunction of the mitral posterior leaflet (Video 2. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)). Real time three dimensional (3D) TEE (iE 33 ultrasound, Philips Medical Sytems) demonstrated restricted motion of posterior leaflet (Video 3. See corresponding video/movie images at [www.anakarder.com](http://www.anakarder.com)). There was no evidence of thrombus on the PMV, in 3D TEE examination. 3D images demonstrated a pannus like mass extending to both the atrial and ventricular sides of the prosthetic valve. Because of his critical condition, urgent operation was offered, however immediately after TEE examination his clinical status deteriorated and he died. In this case, real time 3-D TEE has been presented as a sufficient approach, providing accurate assessment of early prosthetic valve dysfunction.

**Video 1.** Transesophageal echocardiographic image of prosthetic mitral valve

**Video 2.** Cine fluoroscopy showing dysfunction of the posterior leaflet

**Video 3.** Real-time 3D transesophageal echocardiographic demonstration of stuck posterior leaflet

**Saide Aytekin, Selen Yurdakul, Yelda Tayyareci**  
Clinic of Cardiology, Florence Nightingale Hospital,  
Istanbul-Turkey

**Address for Correspondence/Yazışma Adresi:** Dr. Saide Aytekin  
Florence Nightingale Hastanesi, Kardiyoloji Kliniği, İstanbul-Türkiye  
Phone: +90 212 224 49 50 Fax: +90 212 224 49 82  
E-mail: saideaytekin@gmail.com

**Available Online Date/Çevrimiçi Yayın Tarihi:** 05.11.2012

©Telif Hakkı 2013 AVES Yayıncılık Ltd. Şti. - Makale metnine [www.anakarder.com](http://www.anakarder.com) web sayfasından ulaşılabilir.

©Copyright 2013 by AVES Yayıncılık Ltd. - Available on-line at [www.anakarder.com](http://www.anakarder.com)  
doi:10.5152/akd.2013.021